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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Yu-Cheun Jou

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EXAMINER

PATEL, NIRAV B

ART UNIT

PAPER NUMBER

2135

NOTIFICATION DATE

DELIVERY MODE

09/24/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/085,581	Applicant(s) JOU ET AL.	
	Examiner NIRAV PATEL	Art Unit 2135	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2008 (Amendment).
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3-6, 8, 9, 10, 20, 22-25, 27- 29, 39-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-6, 8, 9, 10, 20, 22-25, 27- 29, 39-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's amendment filed on June 13, 2008 has been entered. Claims 1, 3-6, 8, 9, 10, 20, 22-25, 27- 29, 39-41 are pending. Claim 41 is amended by the applicant.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 20, 22-24, 25, 27-29, 39-40 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 20 recites, "An apparatus for scrambling information bits in a communication system, the apparatus comprising: means for determining a scrambling sequence....; means for scrambling information bits.....". The claimed apparatus directs to logic or module or algorithm and in accordance with the applicant's specification [page 15, paragraph 1056], logic or module or algorithm is computer software. As such, the claimed apparatus must include hardware or physical transformation necessary to realize any of the functionality of the claimed modules and produce a useful, concrete and tangible result. Absent recitation of such hardware or physical transformation as part of the claimed apparatus, it is considered non-statutory.

Claims 22-24 depend on claim 20, therefore they are rejected with the same rationale applied against claim 20 above.

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Claims 25, 39 and 40 have limitations that are similar to those of claim 20, thus they are rejected with the same rationale applied against claim 20 above.

Claims 27-29 depend on claim 25, therefore they are rejected with the same rationale applied against claim 25 above.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3-5, 20, 22-34, 39 and 41 are rejected under 35 U.S.C. 102(b) as being anticipated by Bodin (WO 97/12461).

As per claim 1, Bodin discloses:

determining a scrambling sequence based on a metric of system time, wherein said determining a scrambling sequence includes determining the metric based on a subinterval of a system time interval in which the information bits are to be transmitted [Fig. 3-6, page 6 lines 6-9, page 7 lines 6-10, 23-26, page 8 lines 1-4, page 6 lines 1-3]; and scrambling information bits with the scrambling sequence in accordance with the metric [Fig. 2, page 6 lines 1-3].

As per claim 3, the rejection of claim 1 is incorporated and Bodin discloses:

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determining the metric in accordance with a first subinterval of the system time interval [page 7 lines 7-10].

As per claim 4, the rejection of claim 1 is incorporated and Bodin discloses:
performing mapping of the metric on the scrambling sequence [page 7 lines 7-10].

As per claim 5, the rejection of claim 1 is incorporated and Bodin discloses:
performing an exclusive-OR of the information bits with the scrambling sequence [Fig. 2, page 6 lines 2-4].

As per claim 20, it encompasses limitations that are similar to limitations of claim 1. Thus, it is rejected with the same rationale applied against claim 1 above.

As per claim 22, the rejection of claim 20 is incorporated and it encompasses limitations that are similar to limitations of claim 3. Thus, it is rejected with the same rationale applied against claim 3 above.

As per claim 23, the rejection of claim 20 is incorporated and it encompasses limitations that are similar to limitations of claim 4. Thus, it is rejected with the same rationale applied against claim 4 above.

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As per claim 24, the rejection of claim 20 is incorporated and it encompasses limitations that are similar to limitations of claim 5. Thus, it is rejected with the same rationale applied against claim 5 above.

As per claim 39, Bodin discloses:

determining a scrambling sequence based on an interval of channel in which the information bits are to be transmitted [Fig. 3-6, page 6 lines 6-9, page 7 lines 6-10, page 8 lines 1-4, page 6 lines 1-3]; and scrambling information bits with the scrambling sequence in accordance with the interval of the channel [Fig. 2, page 6 lines 1-3].

As per claim 41, it encompasses limitations that are similar to limitations of claim 1. Thus, it is rejected with the same rationale applied against claim 1 above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6, 8-10, 25, 27-29 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dent (EP 0446194) in view of in view of Bodin (WO 97/12461).

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As per claim 6, Dent discloses:

determining an unscrambling sequence based on count/time clock (for time slot) [Fig. 4, 6, 7, time clock or block counter controls the operation of the time-of-day or block-count driven ciphering/deciphering device, including a synchronization mechanism, col. 16 lines 12-16, col. 16 lines 50-53-col. 17 lines 1-40, col. 15 lines 8-14]; determining the count/time clock based on a first subinterval of a system time interval preceding a second subinterval of the system time interval by a pre-determined number of subintervals, wherein the second subinterval comprises information bits to be unscrambled [Figs. 5, 7 and Figs. 4, 6, col. 15 lines 8-14, col. 16 lines 50-53-col. 17 lines 1-40]; and determining the unscrambling sequence in accordance with the time clock/count [Fig. 4-7, col. 16 lines 50-53-col. 17 lines 1-40, col. 18 lines 20-38].

Dent teaches determining an unscrambling sequence based on count/time clock as shown in Fig. 4 [component 204, 205]. Dent doesn't expressively mention a metric of system time.

Bodin discloses:

determining a unscrambling sequence based on a metric of system time [Fig. 3-6, page 6 lines 6-9, page 7 lines 6-10, 23-26, page 8 lines 1-4, page 8 lines 35-37 and page 9 lines 1-2].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Bodin with Dent, since one would have been motivated to provide reliable encryption/decryption in a radio communication system

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without needing to make substantial changes to the signaling protocol and/or system equipment [Bodin, page 3 lines 2-6].

As per claim 8, the rejection of claim 6 is incorporated and Dent discloses:

determining the first subinterval of the system time interval preceding the second subinterval of the system time interval by one subinterval [Fig. 7, time clock or block counter controls the operation of the time-of-day or block-count driven ciphering/deciphering device, including a synchronization mechanism, col. 16 lines 12-16, col. 17 lines 5-40, col. 18 lines 10-25].

As per claim 9, the rejection of claim 6 is incorporated and Bodin discloses:

performing mapping of the metric on the unscrambling sequence [page 7 lines 7-10].

As per claim 10, the rejection of claim 6 is incorporated and Bodin discloses:

performing an exclusive-OR of the information bits with the unscrambling sequence [Fig. 2, page 6 lines 2-4].

As per claim 25, it encompasses limitations that are similar to limitations of claim 6.

Thus, it is rejected with the same rationale applied against claim 6 above.

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As per claim 27, the rejection of claim 25 is incorporated and it encompasses limitations that are similar to limitations of claim 8. Thus, it is rejected with the same rationale applied against claim 8 above.

As per claim 28, the rejection of claim 25 is incorporated and it encompasses limitations that are similar to limitations of claim 9. Thus, it is rejected with the same rationale applied against claim 9 above.

As per claim 29, the rejection of claim 25 is incorporated and it encompasses limitations that are similar to limitations of claim 10. Thus, it is rejected with the same rationale applied against claim 10 above.

As per claim 40, it encompasses limitations that are similar to limitations of claim 6. Thus, it is rejected with the same rationale applied against claim 6 above.

Response to Argument

5. Applicant's arguments filed June 13, 2008 have been fully considered but they are not persuasive.

Regarding to the Applicant's argument to the 35 USC § 101 rejection, Examiner maintains the rejection for claims 20, 22-24, 25, 27-29, 39-40 because they recite non-

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statutory matter. As per the specification [paragraph 1055] of the present application, the various logical blocks, modules, circuits and algorithms steps described in the present application may be implemented as electronic hardware, computer software or combination of both. Therefore, the claimed apparatus is not limited to hardware or a combination of hardware and software, instead being sufficiently broad so as to encompass software alone. As such, the claimed apparatus must include the hardware necessary to realize any of the functionality of the claimed modules and produce a useful, concrete and tangible result. Absent recitation of such hardware as part of the claimed system, it is considered non-statutory.

Regarding to the applicant's argument that Bodin does not teach "determining a scrambling sequence based on a metric of system time", Examiner maintains, since Bodin's invention relates to a method of encryption information between a stationary network and a mobile station in a mobile radio system of the time division multiple access type. As shown in Fig. 2, the information is encrypted and formatted for transmission over two time slots TS1, TS2 (subinterval of a system time interval in which the information bits are to be transmitted). When two time slots in a given frame are available, an information block is now divided into two sub-blocks B1 and B2. Each block is encrypted with the pseudo-random sequence PS. The pseudo-random sequence PS is obtained from an ordinary number FN of the frame in which the time slots TS1, TS2 are located whose information shall be encrypted. Therefore, Bodin discloses the claim limitation, "determining a scrambling sequence based on a metric of

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system time.....the metric based on a subinterval of a system time interval in which the information bits are to be transmitted; scrambling information bits with the scrambling sequence...". The argued term "system time" or "metric of system time" is not clearly stated in the claimed language as presented in the applicant's remark [page 10 lines 9-10, 26-29]. The Applicant is reminded that presented argument in the remark is not considered unless stated expressively in the claim language. Applicant is reminded that additional modification to clarify the claimed language is necessary for further consideration and distinction from the prior art.

For the above reasons, it is believed that the rejections should be sustained.

Conclusion

6. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nirav Patel whose telephone number is 571-272-5936. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on 571-272-3859. The fax and phone numbers for the organization where this application or proceeding is assigned is 571-273-8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2100.

NBP

9/18/09

/KimYen Vu/

Supervisory Patent Examiner, Art Unit 2135